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1. (amended) A photoresist comprising a photoactive component and a polymer that comprises: i) a heteroalicyclic group that is not an anhydride or lactone and is fused to the polymer backbone and that contains one or more oxygen or sulfur ring members; ii) a carbon alicyclic group fused to the polymer backbone; and iii) a photoacid-labile moiety.

Please add the following new claims.

46. The photoresist of claim 1 wherein the photoacid-labile moiety is a substituent of the heteroalicyclic group or carbon alicyclic group.

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47. The photoresist of claim 1 wherein the photoacid-labile moiety is a polymer unit separate from the heteroalicyclic group or carbon alicyclic group.

48. The photoresist of claim 1 wherein the polymer further comprises lactone or anhydride units.

49. The photoresist of claim 1 wherein the polymer further comprises polymerized maleic anhydride groups.

50. The photoresist of claim 1 wherein the heteroalicyclic group fused to the polymer backbone does not contain an unsaturated oxygen.

51. The photoresist of claim 1 wherein the heteroalicyclic group fused to the polymer backbone does not contain an unsaturated sulfur.

52. A photoresist comprising a photoactive component and a polymer that comprises: i) a heteroalicyclic group fused to the polymer backbone and that contains one or more oxygen ring members but does not contain an unsaturated oxygen; ii) a carbon alicyclic group fused to the polymer backbone; and iii) a photoacid-labile moiety.

53. The photoresist of claim 52 wherein the carbon alicyclic group is a polymerized norbornene group.

54. The photoresist of claim 52 wherein the photoacid-labile moiety is a substituent of the heteroalicyclic group or carbon alicyclic group.

55. The photoresist of claim 52 wherein the photoacid-labile moiety is a polymer unit separate from the heteroalicyclic group or carbon alicyclic group.

56. The photoresist of claim 52 wherein the polymer further comprises lactone or anhydride units.

57. The photoresist of claim 52 wherein the polymer further comprises polymerized maleic anhydride groups.

58. A method of forming a positive photoresist relief image, comprising:
applying a coating layer of claim 52 on a substrate; and
exposing and developing the photoresist layer to yield a relief image.

59. The method of claim 58 wherein the photoresist layer is exposed with radiation having a wavelength of less than about 200 nm.

60. The method of claim 58 wherein the photoresist layer is exposed with radiation having a wavelength of about 193 nm.

C² 61. The method of claim 1 wherein the photoresist layer is exposed with radiation having a wavelength of less than about 200 nm.

62. The method of claim 1 wherein the photoresist layer is exposed with radiation having a wavelength of about 193 nm.

63. An article of manufacture comprising a microelectronic wafer substrate having coated thereon a layer of the photoresist of claim 52.

REMARKS

The specification has been amended, claims 13 and 25-27 have been cancelled without prejudice, claim 1 has been amended, and claims 46-63 have been added. No new matter has been added by virtue of the amendments and new claims. For instance, support for the amendment of claim 1 appears in original claim 13 and page 6, lines 10-14 of the application. Support for the new claims appears e.g. in original claims 2-12, 35-37 and 41. In particular, support for new claim 52 appears e.g. in original claim 11 of the application.

While Applicants fully disagree with the statements set forth on page 2 of the Office Action, it is also believed the amendment of the specification obviates any issues.

Claims 1, 3-5, 8 and 23-24 were rejected under the doctrine of obviousness-type double-patenting over certain claims of U.S. Patent 6,306,554.